Patent Claims

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1. A method of digital image processing in CMOS camera
images, characterized in that the variation in time of the output
signal value g is a combination of the term c*g and the source term
q and the calculation of the target signal value q comprises the
subtraction of the term c*g from the variation in time of the
output signal value g of the image data.

2. The method according to claim 1, characterized in
that for regions of the image data with high contrast, a parameter
estimation or approximation is carried out.

3. The method according to one of the claims 1 to 2,
characterized in that for the parameter estimation or
approximation, the "total least squares" (TLS), "ordinary least
squares" (OLS), "Mixed OLS-TLS" and/or variation methods is used.

4. The method according to one of claims 1 to 3,
characterized in that the decay constant c and/or the object shift
u is determined by parameter approximation from the image data.

5. The method according to one of claims 1 to 4,
characterized in that the decay constant c is determined by
calibration of the camera.

6.   The method according to one of claims 1 to 5, characterized in that the differential equation (1)

$$\frac{dg(x,y,t)}{dt} = c(x,y,t)g(x,y,t) + q(x,y,t) \Leftrightarrow$$

$$\Leftrightarrow \frac{\partial g}{\partial x}u_x + \frac{\partial g}{\partial y}u_y + \frac{\partial g}{\partial t} - c(x,y,t)g(x,y,t) - q(x,y,t) = 0 \dots\dots\dots(1)$$

with

g = the gray value of the image sequence

u = object shift (vector field shift)

c = decay constant

q = source term (light) of interest

is used.

7.   The method according to one of claims 1 to 6, characterized in that known object movements u_x and u_y are introduced directly into differential equation (1).

8.   The method according to one of claims 1 to 7, characterized in that it is implemented by field programmable gate arrays (FPGA's).

9. A device for digital image processing in CMOS camera images, characterized in that it is suitable for carrying out the method according to claims 1 to 8.